

facing east so the squid in this case took off downwind, which would further substantiate their ability of supported flight.

Although the specimens mentioned were not recovered, three additional specimens were captured via dip-net in the same area and were identified by Mr. Gilbert L. Voss of the Marine Laboratory, University of Miami, as *Stenoteuthis bartrami* and *Ommastrephes sagittatus*. The latter has apparently never been reported as flying and it is not certain that the observations recorded here pertain to this species. Members of the family Ommastrephidae are known as the "flying squids" and have been reported from the decks of vessels, but since the actual specimens were not captured in this case, no positive statements can be made. Members of the genus *Stenoteuthis* are similar in body to *Ommastrephes*, and it is possible that a member of this genus was one of those seen in flight.

A third observation of flight was made by a deckhand on board the vessel on January 30, 1954, at 0850. This occurred at approximately 27° 00' N latitude and 79° 18' W longitude. The squid was seen breaking the surface tail first, emitting a fine jet of water and sailing about twenty feet diagonally across the bow. The vessel was steering 332°, there was a ten knot NE wind and there was a slight surface chop. Contrary to the case in the instances previous, this squid took off quartering the wind.

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## NOTES ON MEXICAN MOLLUSKS. I: DURANGO, COAHUILA AND TAMAULIPAS, WITH DESCRIPTION OF TWO NEW HUMBOLDTIANA

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In recent years a number of lots of mollusks have been brought back from Mexico by staff members and students of the University Museums. While from widely scattered localities and gen-

erally consisting of only a few specimens, they are of great interest as the localities represented are generally very inaccessible and but little of Mexico is well known conchologically. Reports are being prepared on the material and, for convenience, are being grouped geographically.

In the course of paleontological field work, Robert M. Linsley of the University Museum of Paleontology collected a few mollusks from the Durango-Coahuila border. The specimens were found near the central portion of the Sierra de Tlahualilo, and 25 miles north of the town of Tlahualilo.

*Bulimulus (Rhabdotus) schiedeanus* (Prr.) was found aestivating on bushes both on the plain (ca. 3600') and on the top of the range (ca. 4800').

*Holospira (Halplacion) durangoensis* Bartsch (1906: 142-143) was found on the faces of limestone rock on the slope of the mountain only. Previously reported only from Durango, Durango, this species was omitted from the summary of *Haplocion* given by Bartsch (1943: 56), but included by Pilsbry (1953: 151). Adult, non-decollated specimens have 11-13 whorls and range in length from 26-32 mm.

In 1948 Paul S. Martin of the Museum of Zoology collected three specimens of a *Humboldtiana* from western Durango, which, on the basis of conchological characteristics, appears to be new. The extent of speciation in *Humboldtiana* will probably be discovered to be as great as in *Helminthoglypta* and just as complex. The exact status of the forms described here and previously described entities cannot be finally settled until a vast amount of material has been collected and studied. The described forms are being erected on the basis of conchological characters and different geographic locality from related species. It is recognized that extensive collections from Mexico may completely change the status of these forms, but they are distinct on the basis of known material.

HUMBOLDTIANA DURANGOENSIS, n.sp.

Pl. 1, figs. 2, 6

*Type:* University of Michigan Museum of Zoology 169746, in pine woods at 8000', Laguna del Progreso (a mill of the Pacific Lumber Co.), 30 mi. NNW of Los Coyotes and 25 mi. NNW of El Salto, Durango, Mexico.

*Diagnosis:* A species of *Humboldtiana* distinguished from *H. nuevoleonis* by its larger nuclear whorls, higher spire, more rounded contours and smaller granules comprising its sculpture; from *H. taylori* Drake by its larger nuclear whorls, more impressed sutures, much smaller granular sculpture and different coloration.

*Description:* Shell ovate-globose, rather heavy; 4-4½ whorls, first one and three-quarters embryonic, smooth, shining, remaining whorls densely covered with round to oval granulations occurring 5-6 per millimeter both longitudinally and spirally; growth wrinkles present but not prominent; ground color light olive-brown interrupted by numerous white streaks; body whorl with three spiral chocolate-brown bands, the upper and lower equal in size, the middle one about ⅔ as wide; last whorl descending; aperture ovate; columellar margin broadly reflected over the umbilicus, but not sealing it; basal margin of shell slightly reflected; parietal callus thin, transparent. Height 37.3 mm.; diameter 39.4 mm.; height of aperture 28.2 mm.; diameter 22.9 mm.

*Paratypes:* UMMZ 169745, two specimens collected March 26, 1948, near a cave at the same locality. Largest specimen measuring 41.5 mm. in diameter and 39.4 mm. in height. Coloration and sculpture as in type. Two more paratypes were collected by I. J. Cantrall March 24, 1953, at 8000' about 2.5 mi. W of San Luis, Durango. They are slightly smaller than the other specimens, but still much, much larger than some forms discussed below. San Luis and Laguna del Progreso are within 10 km. or so of each other and are located about 110 km. west of Durango City near the Durango-Sinaloa border.

*Discussion:* The exact phylogenetic relationships of the form cannot be determined until the anatomy is known, as better criteria for specific separation exist in the genitalia than in the shell. Conchologically, however, it is most similar to the Coahuilan *H. taylori* and *H. nuevoleonis* of Monterrey and vicinity. Nevertheless, I believe its true affinities lie somewhere between the heavily sculptured group of *H. humboldtiana* (= *hegewischi* von Martens) together with the Zacatecan *H. chrysogona* and non-granulated *H. hogeana* group of Chihuahua. In other groups of animals some similarities have recently been noted between the fauna of the Eastern and Western Mexican pine forest regions, so that the first relationship remains a distinct possibility.

From the southern forms mentioned above, *H. durangoensis* is separated by its much larger size, proportionately wider color bands and smaller granulations. Differences from the superficially similar eastern Mexican forms have been determined by comparison with authentic material. UMMZ 92404 is type lot material of *H. nuevoleonis*. No paratypes of *H. taylori* Drake were available, but Chicago Natural History Museum 22369 contains eight young specimens of *H. taylori* Drake collected by Dr. K. P. Schmidt on April 3, 1945, at Campo Central (El Jardin), 20 miles SE of Boquillas, Coahuila at 5400'. This locality is within five miles of Drake's type locality and the shells match Drake's description perfectly. The essential differences are given in the diagnosis and are not repeated here. A type lot specimen of *H. nuevoleonis* is figured in Plate 1, figs. 1, 5, to indicate the difference in nuclear whorls and shell contour.

The only other record of a *Humboldtiana* from Durango is given by van Martens (1890: 147) who reports specimens of *H. hegewischi* (= *humboldtiana* Pfr., see Pilsbry 1948: 185) from Ciudad in the northern part of the state. This record needs confirmation.

Dr. Cantrall also collected several more lots of shells from Durango. The following species were included:

*Pisidium abditum* Haldeman. A number of young sphaerids which seem to belong to this species were collected from the locality near San Luis and the Laguna del Progreso.

*Polygyra matermontana* Pilsbry. This group is a very difficult one and much work remains to be done in working out their relationship. Specimens from San Luis are placed in this species on the basis of a comparison with a paratype of *P. matermontana* (UMMZ 113187) from the John Ponsonby collection. The Durangoan specimens have a narrower umbilicus, but are identical to the paratype in shape and armature. There are also specimens of this species from Taxco, Guerrero in the Michigan collection.

*Ferrissia (Laevapex) excentrica* (Morelet). I have assigned a number of specimens from the Laguna del Progreso to this species with some hesitation. Typical *excentrica* appears to be heavily radially striate, while only a few of the Durangan specimens have heavy sculpture. In this respect, a number of speci-

mens could be assigned to *F. (L.) papillaris* (von Martens). After carefully examining the extensive series of *excentrica* in the Walker collection, I am inclined to consider that the two "species" may be extreme variations of one form.

Since the pioneer works of Fischer and Crosse, Strebel and Pfeffer and von Martens, Pilsbry (1903, 1928) and Dall (1908) are major sources for records in Tamaulipas. Material collected by C. F. Walker in 1950 and by Paul S. Martin and B. E. Harrell in February 1953 provide several additional records.

*Aperostoma (A.) mexicanum salleanum* (von Martens). Specimens from Rancho del Cielo (7 km. north of Gómez Farías) and another locality 20 km. north of Chamal, both in the Sierra Madre Oriental of southwest Tamaulipas, all well within the range of variation shown by H. B. Baker's Vera Cruz material (see Baker 1928). Although its presence in Tamaulipas is not surprising, I believe this is the first record for the state as it was not reported by Pilsbry (1903) in the Rhoads collections.

*Mesomphix (Omphalinella) montereyensis victorianus* Pilsbry. Specimens from each of the above localities.

*Coelocentrum (Crossostephanus) palmeri* Dall and Bartsch. Specimens from the Rancho del Cielo, Chamal and the Aseradero del Paraiso, 15 km. NNW of Chamal. Chamal is a small town located midway between Ocampo and El Limon. The fresh specimens are much slenderer than the figured form (Dall 1908: pl. 29, figs. 2, 5), but are identical in columellar characters and external sculpture. The original locality was simply "Tamaulipas."

*Ceres nelsoni* Dall (1898: 27). A single specimen from Aseradero del Paraiso, 15 km. N of Chamal at 1500' in humid lowland forest. Identical with the figures (Dall 1902: pl. 28, figs. 1, 3, 5, 8) of the San Luis Potosí specimens. To the original description it might be added that the lamellae extend back one-sixth whorl and that with the exception of the one-sixth whorl bearing the lamellae, there are no internal partitions present. H. Burrington Baker (personal communication) informs me that *Ceres* is probably related to the South American *Lini-diella* (= *Cyane* Adams, not Felder, 1861) and with it forms a tribe of the Helicininae, rather than belonging to the vianine Proserpininae.

In addition, Martin and Harrell collected four specimens of an interesting new *Humboldtiana* from near Victoria, Tamaulipas.

HUMBOLDTIANA PILSBRYI, n.sp.

Pl. I, figs. 3, 4

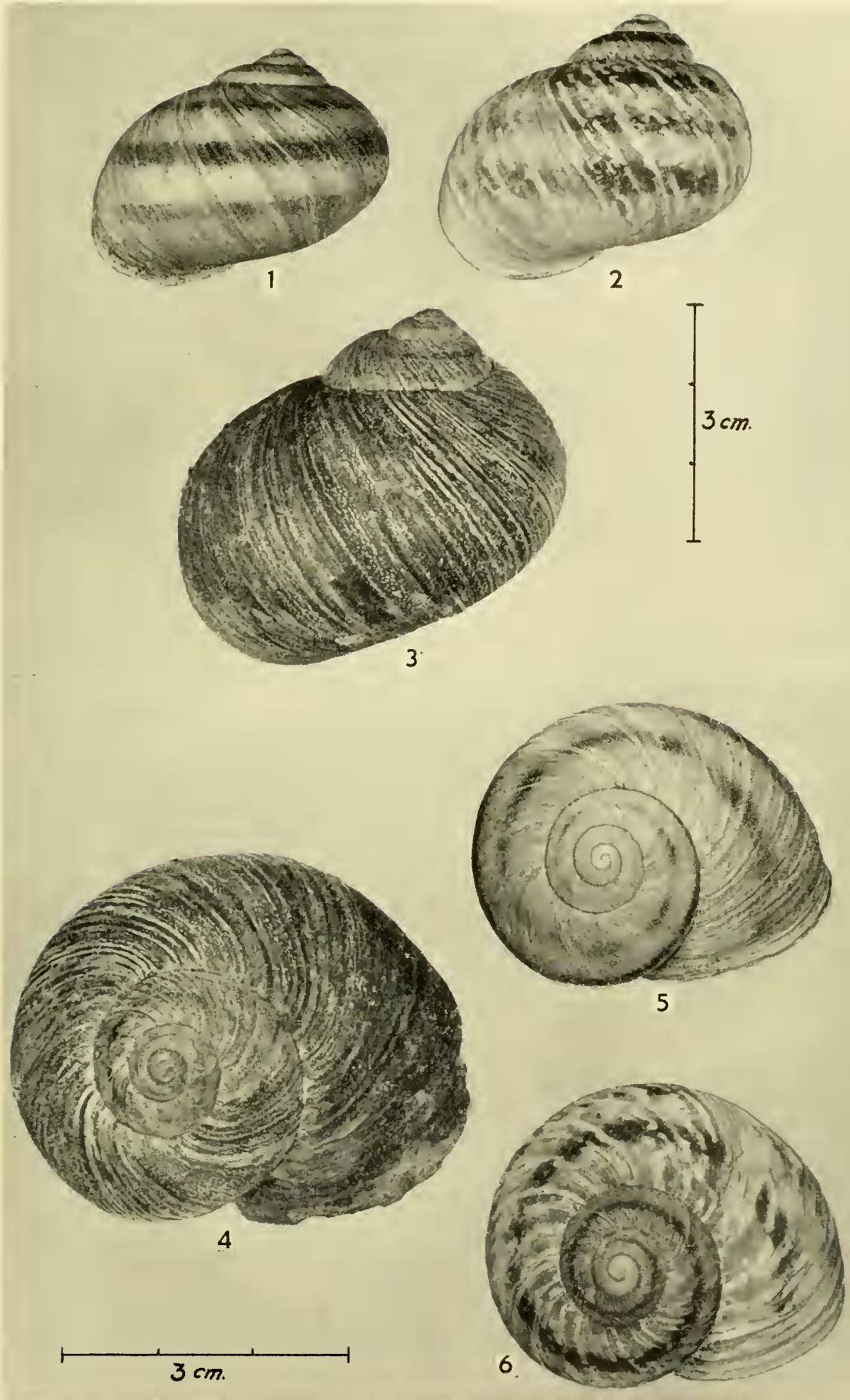
*Type*: MMZ 181280, collected 2 miles (by road) west of Ojitos Mine, about 4 miles West of Chihue (NW of Victoria), a few miles east of China, Tamaulipas, Mexico. The habitat was a humid pine-oak-madronoyucca forest at 8600'. It was collected at a mouth of a cave February 26, 1953.

*Diagnosis*: A species of *Humboldtiana* rather dissimilar to any other Northern Mexican form. It differs from *H. montezuma* Pilsbry mainly in shape and detail of sculpture; from *H. buffoniana* in radular detail, color of animal and shape of shell.

*Description*: Shell large, somewhat globose, fairly thin; five whorls in largest specimen; first  $1\frac{3}{4}$  whorls embryonic, smooth, shining, maculated with brown and white; angle of spire obtuse, sutures impressed, with sides of whorls somewhat flattened as in *H. nuevoleonis*; sculpture consisting of numerous prominent growth wrinkles and many granulations, in number from one to three per millimeter, in shape from round to oval; granulations usually whitish and scattered over both the growth wrinkles and interstices, being very similar to *H. buffoniana* (Pilsbry 1927: pl. 13, fig. 1); ground color chocolate, interrupted by several streaks of yellowish brown and numerous short white streaks, which more or less follow the growth wrinkles; color bands lacking, except for single band on spire and penultimate whorl; last whorl descending somewhat in adult; lip little or not expanded; parietal callus thin, whitish; columellar margin reflected over and almost closing umbilicus. Height 48.4 mm.; diameter 49.8 mm.; height of aperture 41.2 mm., diameter 30 mm.

*Paratypes*: UMMZ 181281; two specimens from type locality; one young specimen and a worn adult measuring 55.8 mm. in diameter and 54.7 mm. in height.

*Animal*: A fourth juvenile specimen preserved in formalin contained the animal. Although too young to yield genital characters, the jaw and radula were extracted and a few notes taken on body color. Back and sides of animal dark grey becoming lighter posteriorly; margins of foot grey, but sole reddish-grey as are mantle lappets. Jaw small and close to that of



FIGS. 1, 5. *Humboldtiana nuevoleonis*. FIGS. 2, 6, *H. durangoensis*.  
FIGS. 3, 4, *H. pilsbryi*.





*H. ultima* figured by Pilsbry (1927: 167, fig. 1d). Radular teeth like those of *H. chisosensis* (Pilsbry 1927: 169, fig. 5).

*Discussion:* The radular difference, color of the animal, higher spire and flatter outline of the shell serve to distinguish this form from *H. buffoniana*. The maculated embryonic whorls, fewer and shorter white streaks, flatter whorls and different sculpture separate it from *H. montezuma*. In many ways it appears intermediate between the two.

I take great pleasure in naming this species for Dr. Henry A. Pilsbry, not only for all the work he has done on this group, but in appreciation of all the help he gave me when I was in Philadelphia.

A number of specimens of Oleacinidae are not reported on at this time, but are held pending comparisons with type specimens and consultation with authorities on this group.

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## A LONG FORGOTTEN SHELL, DELPHINULA LAXA SAY

BY H. A. PILSBRY

On plate 7 of his *American Conchology*, Thomas Say figured a remarkable shell with uncoiled whorls, which he described in 1827 (*Jour. Acad. Nat. Sci. Philadelphia* 5: 207) as *Delphinula laxa*. The greatest breadth of this shell, he wrote, is about nine-tenths of an inch. It had been found by Stephen Elliot of Charleston on Sullivan Island, South Carolina. Say's figures were copied by Chenu, 1859, *Manuel de Conchyliologie* 1: 356, fig. 2635. We reproduce them in figure 1.



FIG. 1. Reproduction of Say's figures of *Delphinula laxa*.

In his remarks Say asks "Can this be a monstrosity of a *Natica*?" This possibility recommended itself to Dr. William H. Dall, who referred to it as "a deformed *Lunatia*" in the Blake Report (*Bull.* 18, M.C.Z., p. 277, 1887). Tryon in 1880 (*Man. Conch.* 2: 213) included it in *Separatista*, but he suggests that it may rather be a valve of *Diceras*. Possibly *D. laxa* may be a species of Gabb's genus *Laxispira*, known from casts in the Upper Cretaceous of New Jersey and also found in European Cretaceous, but this does not seem probable. In 1885 A. E. Verrill described as *Delphinula nitida* a specimen taken between New Jersey and Bermuda in 1423 fathoms (*Trans. Conn. Acad.*